

Towards the end of my postdoc, the combination of designing my lab, buying a home, and moving my family (wife and 2 toddlers) from New York to Boston shortly after 9-11 was almost too much to handle. One day a minor personnel issue put me over the top and my eyelid began to sporadically twitch from stress. I foolishly reassured myself that after I became lab head my eye would never spasm because the people in my group would cater to my style and do science as I dictated. My journey towards becoming a good mentor began from the realization that I was completely wrong and that my attitude would lead to an inefficient and unhappy lab with the potential to do bad science.

The first person to arrive in my lab was Veronica Alvarez, a postdoctoral fellow who is now a thriving Senior Investigator at NIAAA. Luckily for me she was a well-trained, rigorous, and mature scientist with the confidence to stand up to my misguided attitude. After a couple of months of working together, she was obviously unhappy and she asked me if I thought we were simply incompatible and hence incapable of doing good science together. This was the wake-up call that I needed and it forced me to think hard about what it meant to be a mentor, how I could be successful as a lab head, and what kind of lab I wanted to run. At the end of this introversive process, I arrived at set of principles that have helped guide me as a lab head and mentor. I was fortunate that Veronica, in the early days of the lab, sparked this period of reflection, thus helping me to eventually become a better mentor. I am happy to say that Veronica and I became friends and that together we made important scientific contributions while having fun. The lessons that she helped me learn, and which I have continued to refine over the last 17 years, are as follows:

1. *My personality should have no impact on the science we produce.* We all know lab heads whose personalities force lab members to develop coping strategies. Insecurity makes PIs unable to accept intellectual challenges, want to feel loved and needed by their lab members, or threatened by knowledge outside of their own domain. In contrast, but leading to similar pathological results, egotistical lab heads are convinced that they will always be the smartest person in the room and the only one who can move science forward. When Veronica approached me about a potential scientific divorce, I realized that she was suffering because of the way I was acting and that I had forced her to consider my personality when simply trying to do science. Since this time, I have striven to remove my personality from the process of doing science. This doesn't mean that I am a stiff automaton – I have fun with my lab and I express both joy and frustration. However, I make sure that my lab is comfortable coming to me with any scientific idea, concern, data set, success or failure without worrying about how it will make me feel.
2. *Lab is not life – part 1.* The scientists in my lab work hard for long hours. Because of this, their personal life needs to encroach on lab. There will be days during which they need to “waste” time surfing the web, watching a video, or playing a game. They need to take personal calls during work hours and they need to see doctors, take their cars to shops, wait for the cable-guy and do all the other normal parts of life. The fact that we share high expectations does not mean that the rest of their life disappears. As long as they are working intelligently, thinking about their science, and making forward progress, I let their lives enter the lab and encourage them to have fun. I make sure that I show my appreciation for their hard work by buying lunch for anyone who chooses to work on a holiday, by funding little lab parties for every birthday and paper, and by hosting many outings.
3. *Lab is not life – part 2.* I have three sons. The first was born while my wife and I were in graduate school, the second while I was a postdoc and she a medical student, and the third when I was a lab head and she a senior ob/gyn resident. During my postdoc I commuted 43 miles each way from Washington Heights to Cold Spring Harbor Labs, driving in a beat-up baby-blue Buick on the Long Island Expressway, which is often referred to as the “world’s longest parking lot”. I had to arrive back to 168th street by 6 PM to get my kids from day care, or be charged \$5 per minute I was late! We survived that period and my wife is now a hard-working attending physician and Assistant Professor in reproductive endocrinology and infertility at Massachusetts General Hospital. People outside the lab are surprised to hear that from postdoc to today, I have been the primary caretaker for our children. I have left lab nearly every day before 5 PM and have missed countless work hours attending to my children, going to parent-teacher conferences, or staying home with my kids when they are sick. I fully expect people in my lab to do the same. Veronica told me recently that something she greatly appreciated about me was that when I walked out the door each afternoon everyone knew that I was off to pick up my kids at school – I never hid it nor presented it as something regretful or burdensome. I believe that this example has helped graduate students and postdocs,

especially the female ones, feel comfortable making the decision to have children while in my lab (~20 Sabalab children so far). When asked for advice, I tell students and postdocs that there will never be a day when they wake up and say “now is the perfect time to have kids”; therefore, they should just get started while young and working in a laboratory where paying the bills is my responsibility and not theirs. I hope that my example has taught them that being a good parent and a good scientist are perfectly compatible.

4. *Take pride in a well-done process.* As I started my lab, I attended a new-PI workshop in which we were asked to come up with a single word that would describe our future lab. I thought of Amish furniture makers for whom the process of making a chair or table is as important as the beauty and utility of the final product and chose the word “craftmanship”. I try to instill in the scientists in my group that there is a right way to do science and that all experiments should be done with pride. They should never feel shame or embarrassment if I or anyone else spontaneously peers at what they are doing or at their lab notebook. When Nic Tritsch, someone whose rigor in doing science is nearly unparalleled, joined my lab as a postdoc he wanted to know what I valued in a scientist. Trying to explain “craftmanship” to him, I said that I wanted to be sure that if anyone repeated our experiments they would get the same results. If the interpretation was wrong, that was ok, but the results should be reproducible. After starting his own lab, Nic confided in me that he had been terribly disappointed by my response, thinking that it reflected a lack of ambition. However, he added that now that he is responsible for the work of others he realizes that reproducibility of results is hard to achieve and that even as ideas and models crumble, science moves forward if one person is able to build on a solid foundation of another’s results.
5. *There is no such thing as my work vs. the lab’s work.* I became a scientist to do science. That means that I love talking about ideas, seeing primary data, enabling new experiments, and developing models to explain our results. During the day, I leave my office door open and no matter how much I have on my plate, whenever someone asks “do you have a minute?” I answer yes. I make sure to walk through the lab and offices to interact with people spontaneously and I share their joy at an n=1 interesting result. Of course, I do write grants, review papers, prepare lectures, and do committee work, but I typically do these things before 9 AM or after 10 PM. Daylight hours are dedicated to doing and thinking about science with the people of the lab. I think that this genuine love of science serves as a good example for my lab and, I hope, will help them remember later in their careers why we became scientists and how privileged we are to have this remarkable profession that is supported by the rest of society.
6. *It’s not about you – a.k.a. Don’t eat your young.* The people that come through my lab are my legacy and we share a passion for science. Therefore, our interests should always be aligned. I do everything possible to help my former postdocs succeed as lab heads. That means that I continue to talk openly with them about what we are doing in the lab and I listen to their ideas. With only one nameless exception, this approach has been successful and I have good personal and scientific relationships with my former postdocs. They trust me enough to tell me their ideas and I offer them honest feedback and encouragement. I also share technology with them and am the official debugger and technical support for all Sabalab descendants for the data acquisition software that I wrote years ago. This does not apply only to postdocs – I read graduate school application essays written by technicians and undergraduate interns, and I do mock interviews for whoever wants one.
7. *There is no hierarchy.* As a medical student, I hated the rigid hierarchy of the hospital – it wasn’t possible for a lowly medical student to have a good idea or to question the rationale of a senior physician. In contrast, science should always be about generating and testing hypotheses and these can come from anywhere – therefore by definition there can be no intellectual hierarchy. I encourage everyone in the lab to come directly to me with ideas. I try to get the undergraduates and junior technicians to sit in the front of the table for lab meetings and I encourage them to ask questions and make suggestions. I tell junior lab members that the reason I am the lab head and they are, for example, a student is not that I am smart and they are dumb – it is because I’ve already been a graduate student, a postdoc, a junior PI etc... I try hard to make them understand that we are all the same, except that I am older.

I find it difficult to write statements in which I am required to praise myself. I hope that I have succeeded in conveying that becoming a good mentor was the result of a deliberate process. I had to work at it and think deeply about what “mentorship” means. I am not perfect and I sometimes forget my principles, but I am proud to say that I think I do a pretty good job. Thank you, Veronica, for your bluntness all those years ago!